News of Science

NSF Report on Federal Budget for Research

The Federal Government during fiscal year 1956 spent an estimated $2.4 billion for scientific research and development activities, a 7 percent increase over 1955. For the current fiscal year, about $2.7 billion will be spent, 12 percent more than in 1956. These data are contained in a new National Science Foundation report, *Federal Funds for Science, V.*

The report, the fifth in a series, analyzes for the fiscal years 1955, 1956, and 1957, the Federal scientific research and development budgets according to administering agencies, scientific fields, and character of the research. For the first time, data are included that indicate the distribution of Federal funds among the organizations performing Government research.

Approximately 85 to 90 percent of the total funds are for the conduct of research and development; the remainder, for the expansion of the research and development plant and facilities.

Twenty-five agencies of the executive branch administer research and development funds, with individual agencies spending from less than $50,000 a year to approximately $2 billion. However, 99 percent of the funds were spent by eight agencies: Department of Defense; Atomic Energy Commission; Department of Health, Education, and Welfare; Department of Agriculture; National Advisory Committee for Aeronautics; Department of Interior; Department of Commerce; and the National Science Foundation.

By far the greater part of the Federal research budget is devoted to applied research and development. The proportion spent for basic research although comparatively small, is increasing. In fiscal year 1957, basic research will account for about 9 percent of the research budget.

The Federal research dollar during fiscal year 1956 was divided in the following manner: 47 cents for research performed in the Government's own laboratories; 38 cents for research by profit organizations; 13 cents for educational institutions; and the remainder by other organizations. These figures include obligations for research centers which are Government-financed research installations managed for the Government by private organizations. These research centers account for approximately 15 cents of the research dollar.

Physical sciences, including engineering, account for about 87 percent of Government research funds, the life sciences for 11 percent, and the social sciences for 2 percent. A copy of *Federal Funds for Science, V* may be obtained for 35 cents from the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D. C.

N.Y. Botanical Garden Laboratory

A new $1-million laboratory was dedicated recently at the New York Botanical Garden, of which William J. Robbins, botanist, is director. The laboratory includes 32 research rooms with elaborate control of light, temperature, and humidity. The projects to be studied at the new facility will deal with plant nutrition and propagation, abnormal plant growth, antibiotics and antiviral substances associated with plants, and plant diseases. Run-of-the-mill problems will be investigated, too; for example, whether or not natural gas is harmful to vegetation, and whether or not the compost pile can be a source of plant diseases and plant-feeding insects. The city of New York contributed $185,000 toward the cost of the new laboratory and will pay some of the administrative and operating expenses.

ICAO Standard Atmosphere

A new extension to the 20-kilometer International Civil Aviation Organization standard atmosphere (the accepted U.S. standard) is being adopted by about 23 United States scientific and engineering organizations; this extension provides tables of atmospheric parameters up to 300 kilometers. The new standard atmosphere has a temperature of about 217°K at 25 kilometers, 283°K at 47 kilometers, 197°K at 75 kilometers, and then increases more or less continuously above 90 kilometers to reach a temperature of more than 1000°K at 300 kilometers.

Because of their great need for such tables in their high-altitude research programs, the 23 organizations met in November 1953 to seek agreement on a single representation of the atmosphere compatible with the best available data. The U.S. Weather Bureau of the Department of Commerce and the Geophysics Research Directorate, Air Force Cambridge Research Center of the Air Research and Development Command, cosponsored this movement. For further information, write to the committee on Extension to the Standard Atmosphere, Geophysics Research Directorate, 415 Summer St., Boston 10, Mass.

Australian Water Conservation Method

At the United Nations Educational, Scientific and Cultural Organization symposium on climatology that took place recently in Canberra, Australia, Richard G. Casey, Australian minister in charge of industrial scientific research, reported that Australia would make freely available to other countries its new method of using cetyl alcohol, a chemical extracted from whale oil, to limit evaporation from reservoirs and dams. Cetyl alcohol, which is invisible, tasteless, and harmless to animal life, lays a film over the surface of water and keeps it from evaporating. It does not prevent oxygen from entering and so keeps the water fresh. Tests during the last 2 years in dams and reservoirs have shown a reduction in evaporation of between 20 and 70 percent.

Physics Institute Expansion Program

The American Institute of Physics is embarking on a fund-raising campaign for $500,000 to finance a new headquarters building in New York, expand the publishing of technical journals, and attract more well-qualified young men and women to the profession of physics. The AIP is an association of five professional societies with 17,000 members.

The present AIP headquarters building at 57 E. 55 St. is inadequate, and another building at 335 E. 45 St. has been purchased for $280,000. This structure, which is not far from the United Nations Plaza, is four stories high. After remodeling, it will provide three times the working space now available. The AIP headquarters staff has grown from 25 to 60 since the present building was first occupied. The institute's membership has more than doubled, and the